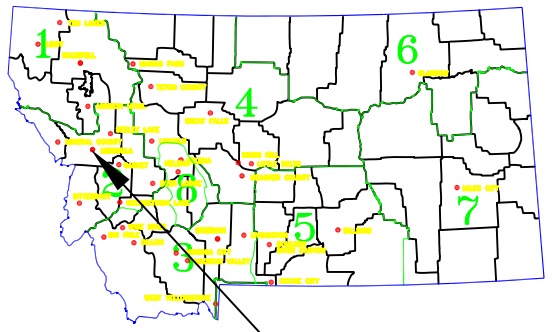
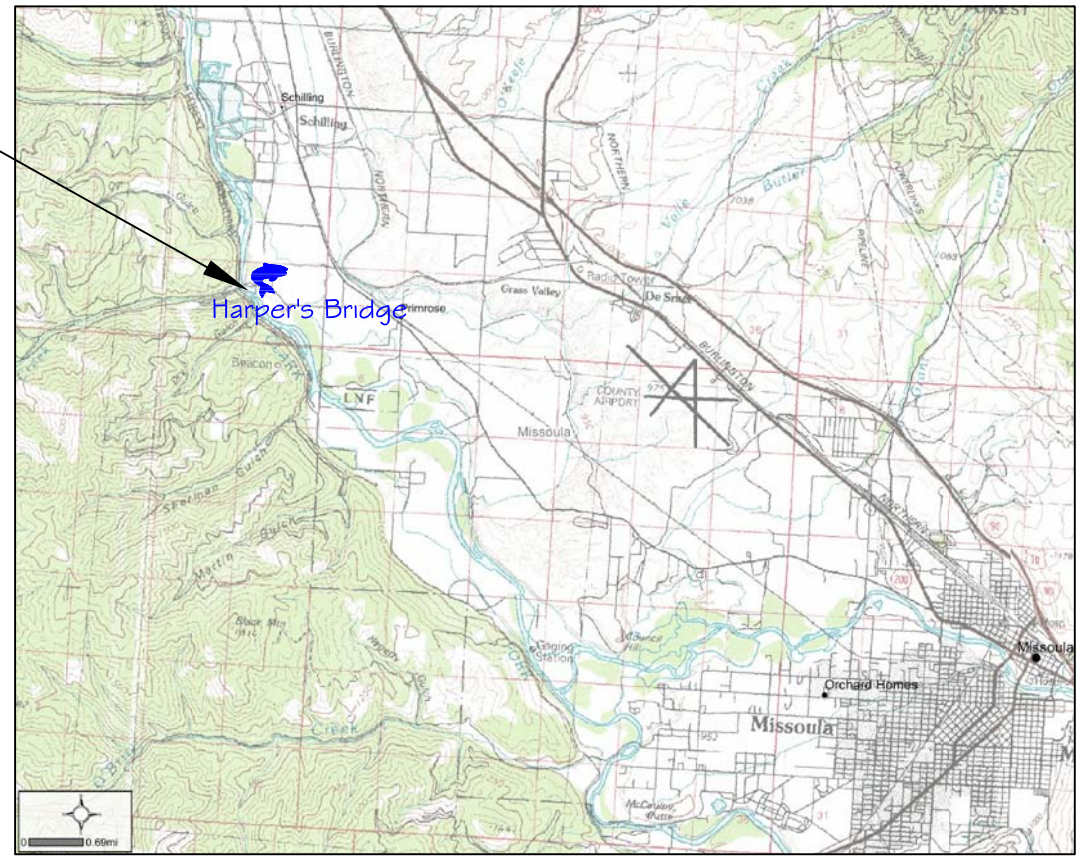


Project Location

Montana Fish, Wildlife & Parks

HARPER'S BRIDGE
Fishing Access Site
Site Development
FWP PROJECT #7096703



SHEET INDEX

Montana Fish, Wildlife & Parks
Design & Construction Section
600 N Park Ave
Helena, MT 59601
406-841-4000 (ph)
406-841-4004 (fax)

MONTANA
MARK C. McNEARNEY
LICENSED PROFESSIONAL ENGINEER

M. McNearney 12/2011					
DRAWN BY: DATE:	REVISED BY: DATE:	APPROVED BY: DATE:	Montana Fish, Wildlife & Parks	Title Sheet Harper's Bridge FAS (near Missoula, MT)	SHEET: 1 of 9
CHECKED BY: DATE:	APPROVED BY: DATE:	APPROVED BY: DATE:			

New FAS Entry Sign

Ex. Wire Fence (to be removed)

3 - FAS Sign Installations at Mullan Rd. Intersection (Location By Owner)

Harpers Bridge Road

New Rail Fence

Abandoned Bridge Site

New Stop Sign

New Pipe Gate

New "Exit Only" Sign

"Keep Right" Sign

(12) Truck / Trailer spaces, 12'x45'

"No Parallel Parking" Sign (typ.)

Precast Concrete Parking Blocks (typ.)

New Barrier Rocks (typ.)

Regulation Sign

(4) Single Vehicle Spaces, 10'x20'

Clark Fork River

Bank Full Elevation

River Elevation, 10/19/09

Scale: 0 20' 40'

CONTROL POINTS

Description	Northing	Easting	Elevation
CP1	10,000.00	5,000.00	3055.24
CP2	10,006.12	4,875.94	3056.14
CP3	9,856.44	4,718.14	3054.02
CP4	9,939.48	5,310.91	3055.56
CP5	9,691.33	4,933.13	3052.19
BM1			3055.06

LEGEND

Existing Features

- Fence
- Vegetation
- Edge of Pavement
- Edge of Gravel
- Utility Pole/Guy
- Overhead Power
- Control Point
- Property Cnr./Bndry.

Proposed Features

- Alignment
- Barrier Rock
- Pipe Gate
- Fence
- Best Mngt. Practice
- Concrete Ramp/Pad
- Gravel Path
- Riprap
- Gravel Surfacing

K. Williams	08/2011	M. McNearney	11/2011		
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Site Plan
Harper's Bridge FAS(near Missoula, MT)

SHEET: 2 of 9

0 5 10

EG. Elev.=3056.0

FF. Elev. =3058.0

Elev. =3055.83

Elev. =3055.56

27’

5% (Max)

18’

1%

1%

Handicap Parking Sign

Elev. =3055.65

PT: 12+98.03

1+00

PC: 13+15.06

3048

3046

3044

Wattles, (see 01800)

Floating Turbidity Curtain

BMP

16’

16’

0%

51+00

51+17

51+76.93

40’

K. Williams	08/2011	M. McNearney	11/2011		
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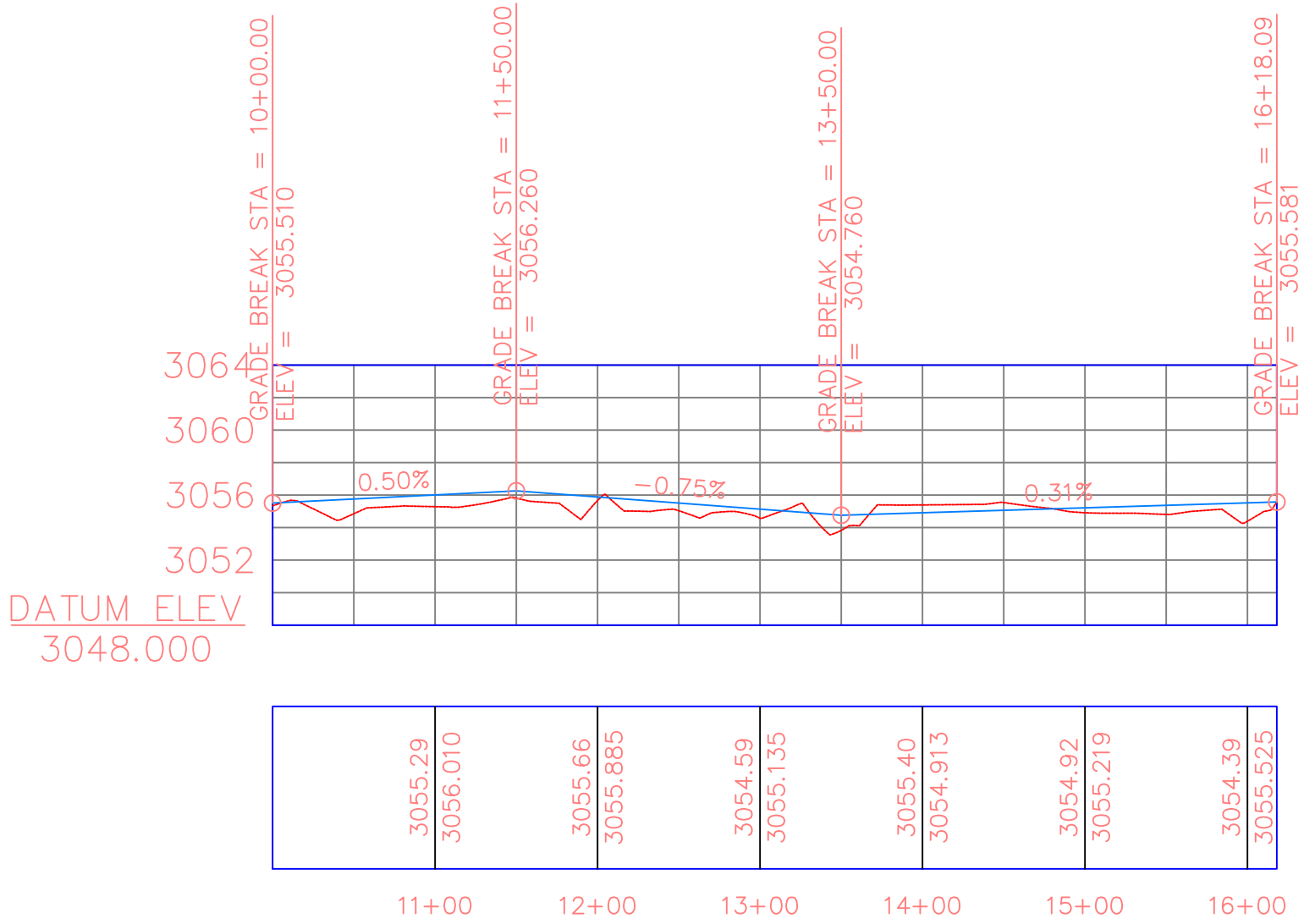
Pathway/Ramp Detail View

Harper’s Bridge FAS(near Missoula, MT)

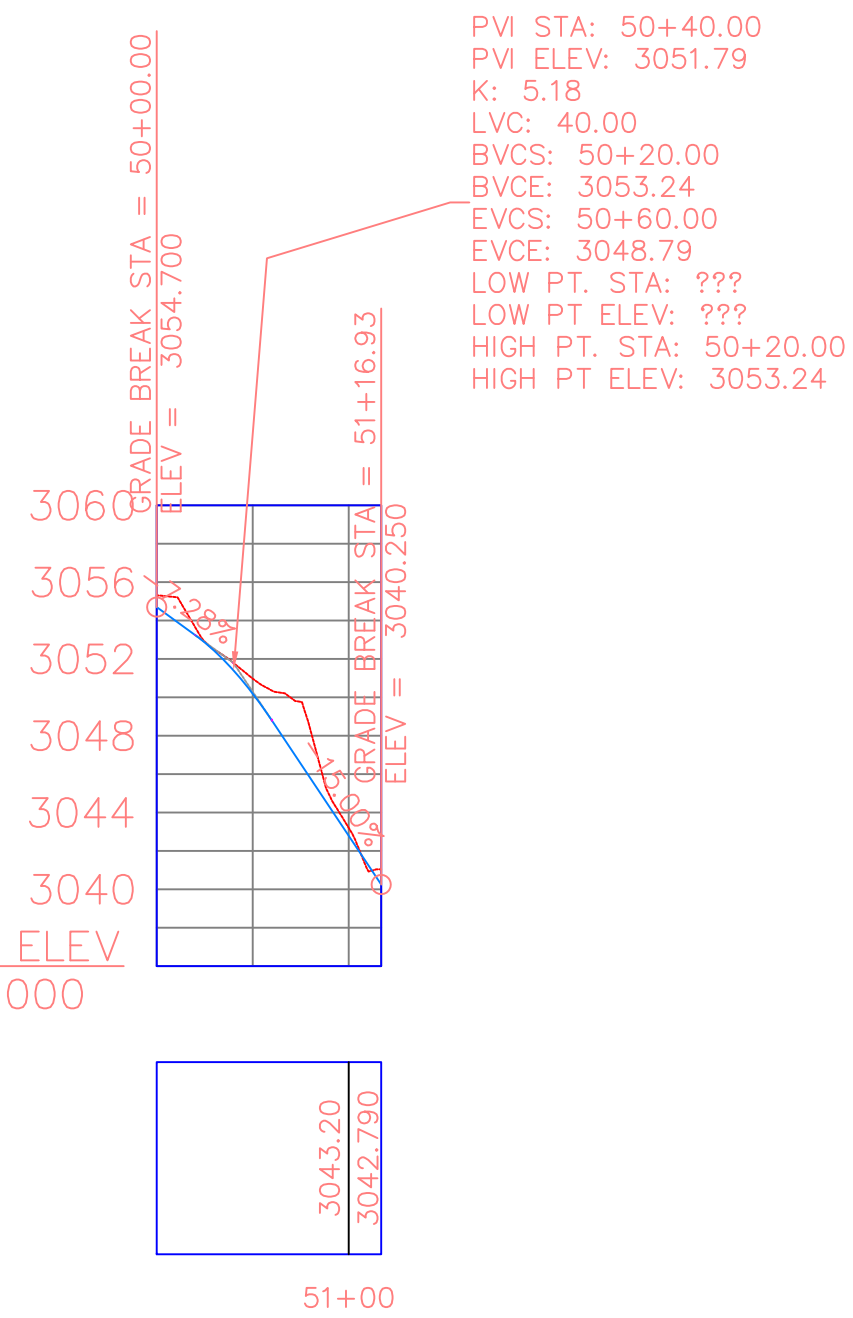
SHEET: 3 of 9



PARKING AREA PROFILE

Horizontal Scale: 0 50’ 100’

Vertical Scale: 0 5’ 10’



BOAT RAMP PROFILE

Horizontal Scale: 0 50’ 100’

Vertical Scale: 0 5’ 10’

K. Williams	08/2011	M. McNearney	11/2011		
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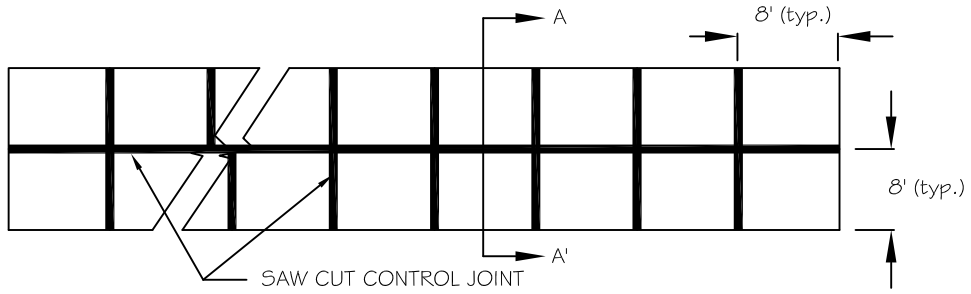
Profile Details
Harper’s Bridge FAS(near Missoula, MT)

SHEET: 4 of 9



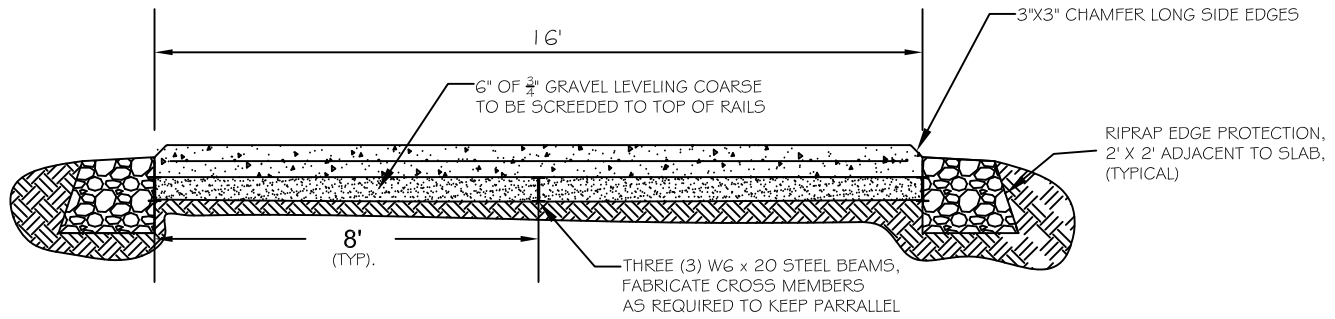
NOTE:

1. CONCRETE FOR NEW RAMP IS A 3/4" MINUS; 6-1/2 BAG MIX WITH A MIN 28 DAY STRENGTH OF 4000 PSI, REINFORCED WITH # 4 BARS @ 12" SPACING BOTH DIRECTIONS.
2. CONCRETE SHALL BE SCREEDED FOLLOED BY GROOVING.
3. CONTRACTION JOINTS SHALL BE SAW CUT AFTER RAMP IS GROOVED.

SLAB CONTROL JOINT DETAIL

PLAN VIEW

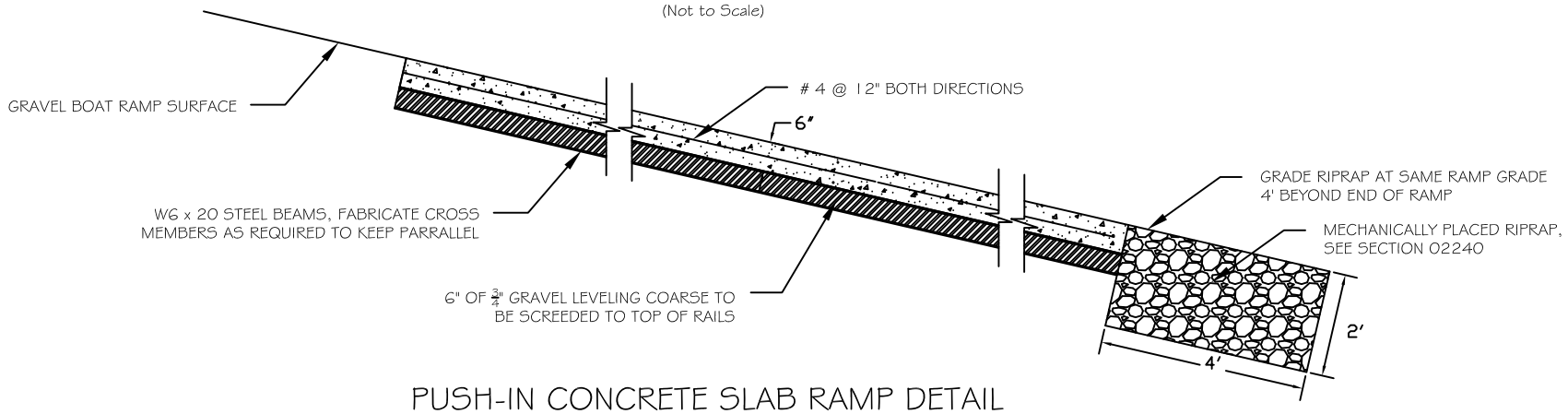
(Not to Scale)



PUSH-IN CONCRETE SLAB RAMP DETAIL (BASE BID)

SECTION VIEW

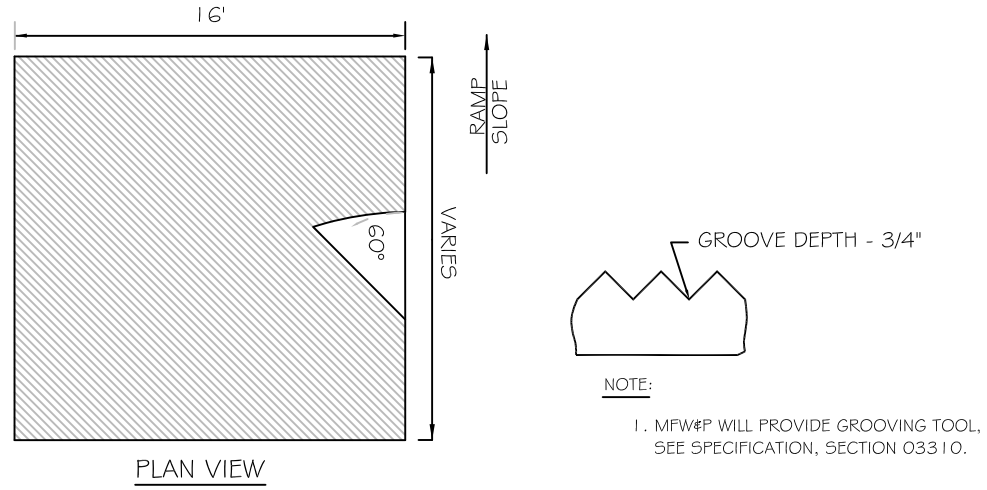
(Not to Scale)



PUSH-IN CONCRETE SLAB RAMP DETAIL

ELEVATION VIEW

(Not to Scale)



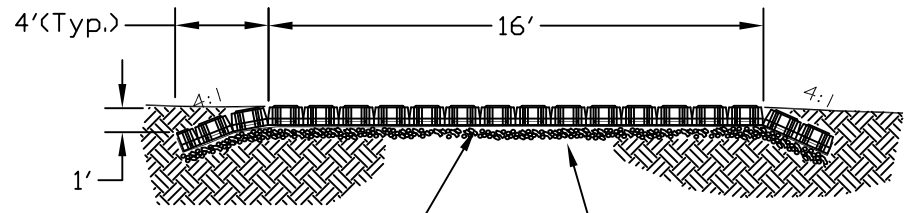
PLAN VIEW

NOTE:

1. MFW&P WILL PROVIDE GROOVING TOOL, SEE SPECIFICATION, SECTION 03310.

GROOVED SURFACE

(Not to Scale)



CABLE MAT RAMP DETAIL (ALTERNATE #1 BID)

SECTION VIEW

(Not to Scale)

NOTES:

1. ALL PUSH-IN SLAB SECTIONS SHALL BE CAST AT APPROXIMATELY THE SAME SLOPE AS THEY ARE TO BE PLACED.
2. ALL PUSH-IN SECTIONS SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 14 DAYS.
3. ALL PUSH IN SECTIONS SHALL BE CAST ON A SMOOTH 4" LAYER OF COMPACTED AGGREGATE.
4. DEPENDING ON CONSTRUCTION EQUIPMENT OR WORKING AREA LIMITATIONS, CONTRACTOR MAY HAVE TO MAKE MULTIPLE PUSH-IN SLAB POURS PRIOR TO FINAL INSTALLATION. ALL SEPARATE POURS WILL REQUIRE REBAR PLACEMENT AS DESCRIBED IN NOTE 5.
5. REBAR SHALL BE EPOXIED INTO FIRST SLAB AND EXTENDED A MINIMUM OF 20" INTO SUBSEQUENT SLAB(S).
6. CONTRACTOR MAY ELECT TO FABRICATE ANGLE IRON ALONG EDGE OF OUTER STEEL SUPPORT BEAMS TO HELP DIRECT PUSH-IN SLAB DURING INSTALLATION.
7. PROVIDE 2½" CLEAR COVER FOR ALL REBAR REINFORCEMENT.
8. PLACE RIPRAP EDGE PROTECTION AT THE SAME GRADE OF PUSH-IN SLAB. KEY IN RIPRAP BY MECHANICAL TAMPING METHODS TO PROVIDE FLUSH SURFACE.

M. McNearney	12/2011				
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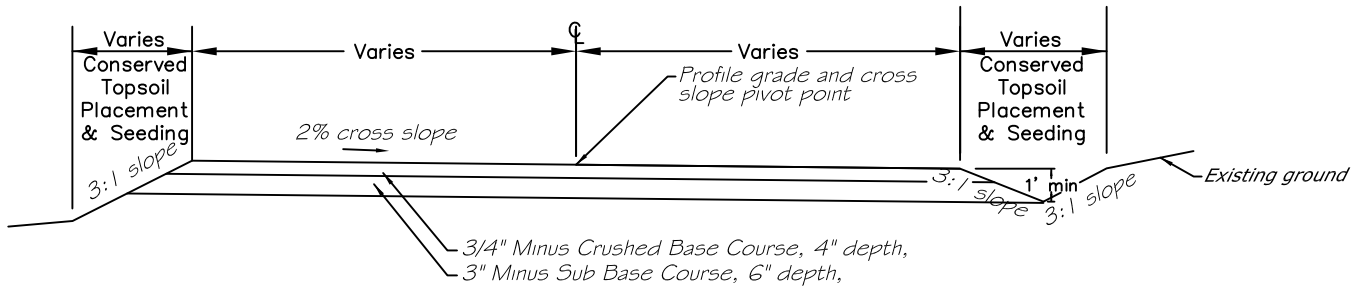
Boat Ramp Details

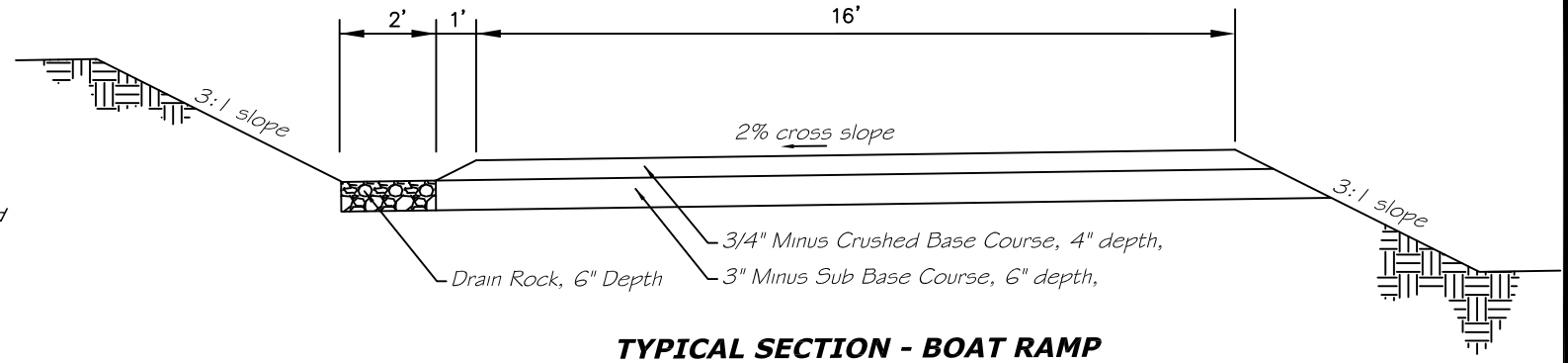
Harper's Brdige FAS (near Missoula, MT)

SHEET: 5 of 9



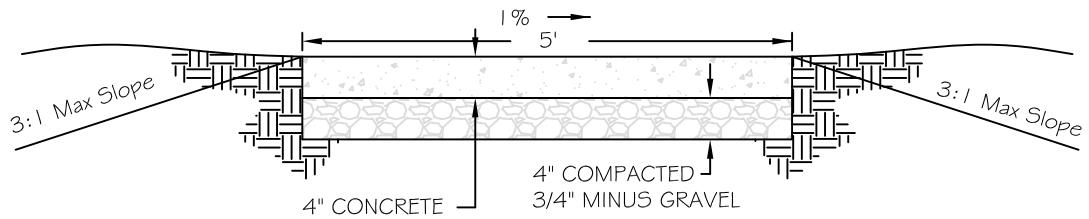
TYPICAL SECTION

(Not to Scale)



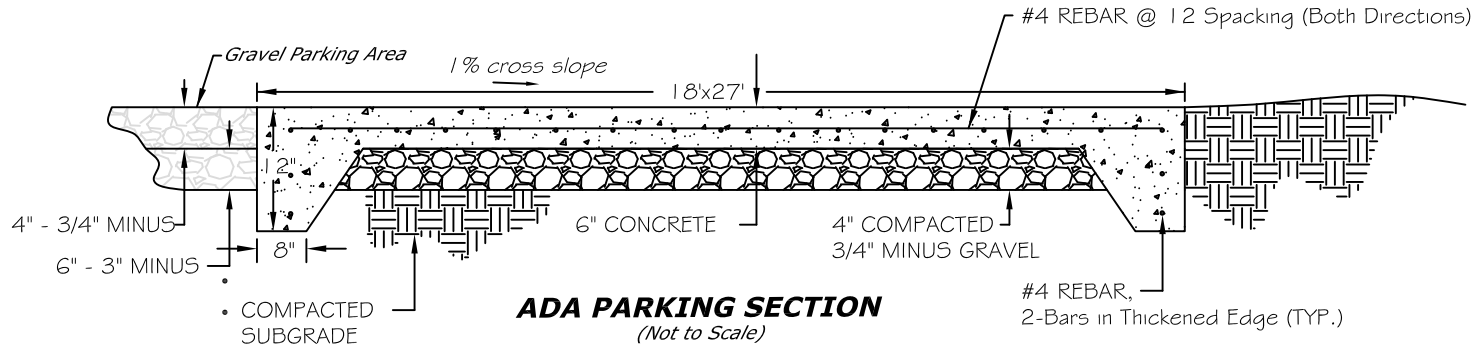
TYPICAL SECTION - BOAT RAMP

(Not to Scale)



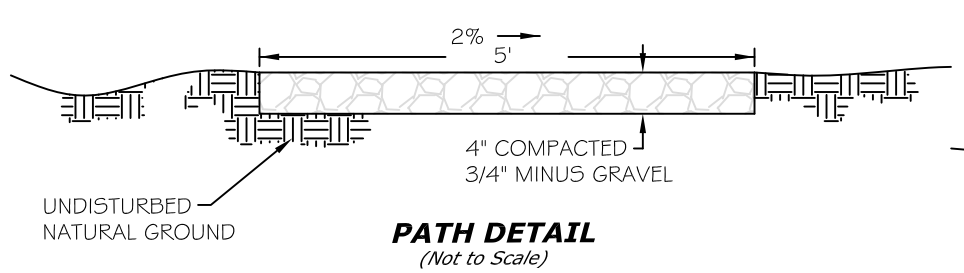
SIDEWALK SECTION

(Not to Scale)



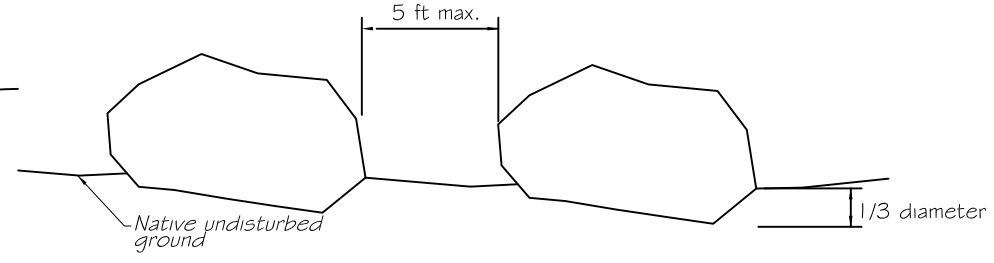
ADA PARKING SECTION

(Not to Scale)



PATH DETAIL

(Not to Scale)

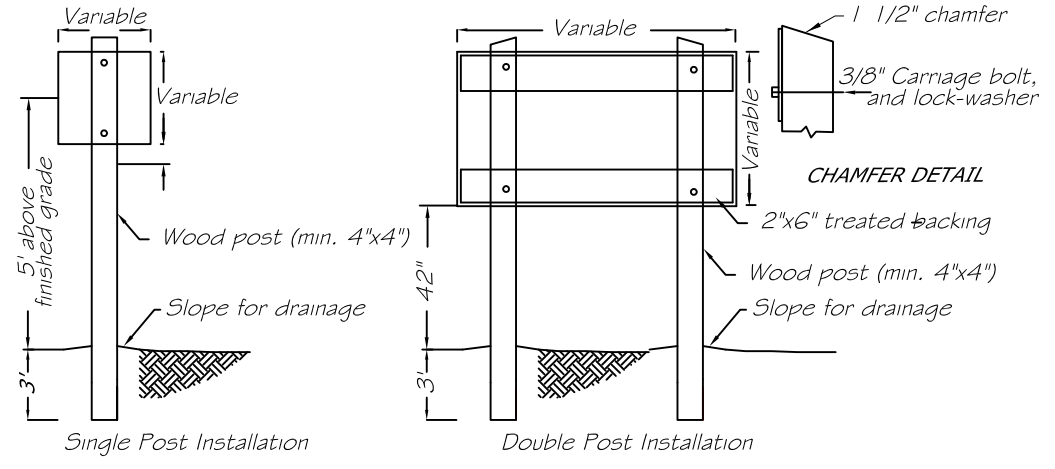


BARRIER ROCK DETAIL

(Not to Scale)

NOTES:

1. Embed barrier rocks 1/3 of barrier diameter.
2. Backfill each boulder with barrier rock excavation material.
3. Space barrier rocks at a maximum distance of 5 ft (edge to edge).
3. Place barrier rocks 5-6 ft from edge of road (edge to gravel).



SIGN POST MOUNTING DETAIL

(Not to Scale)

NOTES:

1. Use pressure treated timbers for all sign posts. Need break-away holes (or device) for larger posts.
2. Coat all posts with preservative for all drilled holes and cut surfaces.
3. Use cadmium plated or galvanized steel for all bolts, nuts & washers.
4. Place bolts to not interfere with sign lettering. Paint bolt heads to match sign.
5. Center signle post panels to post, overhang panels 3" beyond posts for double post installations. Extend all posts 3" above sign panels.
6. See break-away detail for posts larger than 4 inches in diameter.

M. McNearney October, 2009	B. Mangum April 2010	
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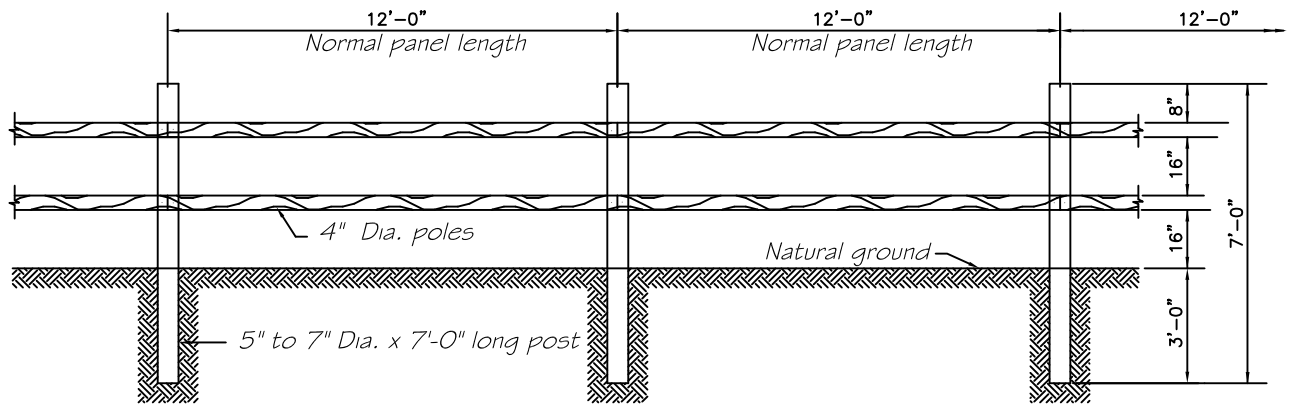
Montana Fish, Wildlife & Parks

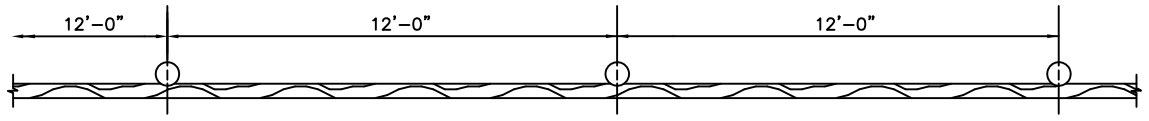
Misc. Details

Harper's Bridge FAS(near Missoula, MT)

SHEET: 6 of 9

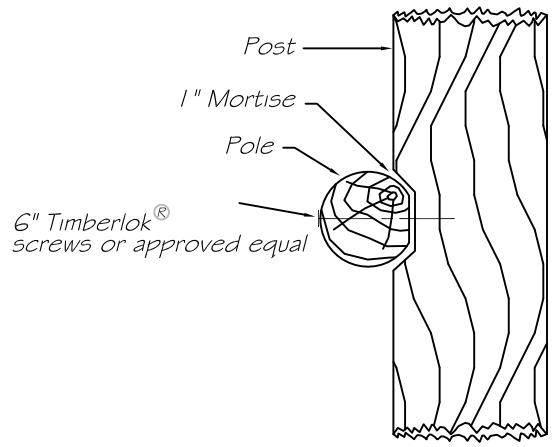


ELEVATION



PLAN

POLE FENCE DETAIL
(Not to Scale)



POST AND POLE CONNECTION
(Not to Scale)

NOTES:
1. Bevel pole @ post to achieve 3" thickness.
2. Post and poles to be fully treated with CCA

M. McNearney October, 2009	B. Mangum April 2010	
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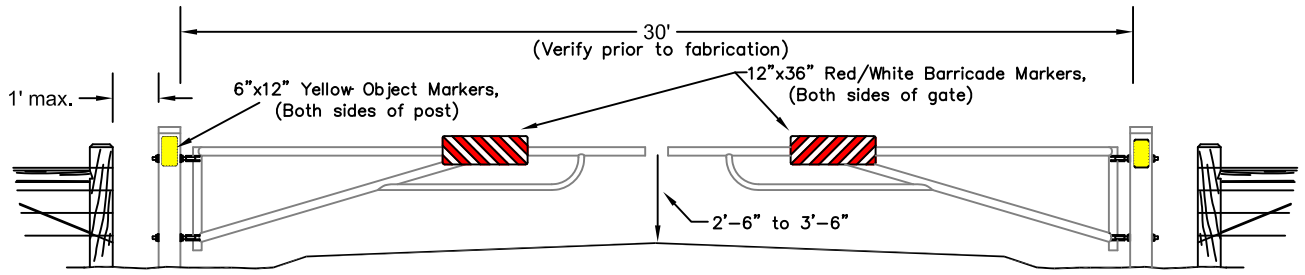
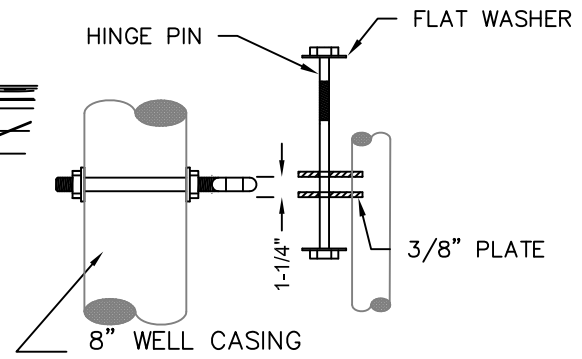
Wooden Rail Fence
Harper's Bridge FAS(near Missoula, MT)

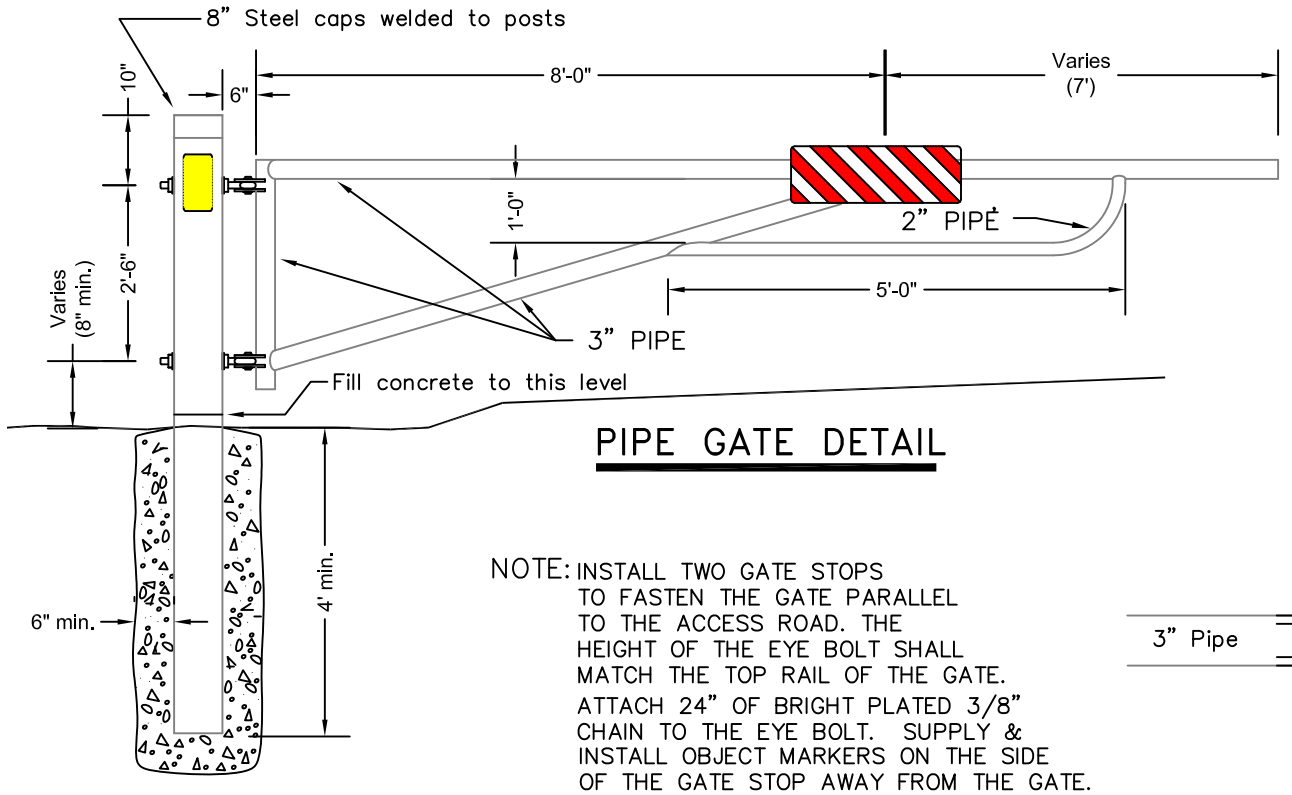
SHEET: 7 of 9



ELEVATION

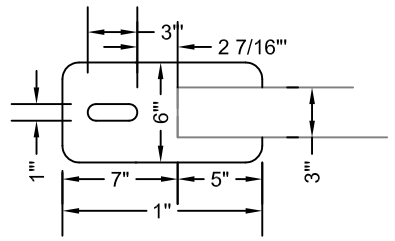


HINGE DETAIL

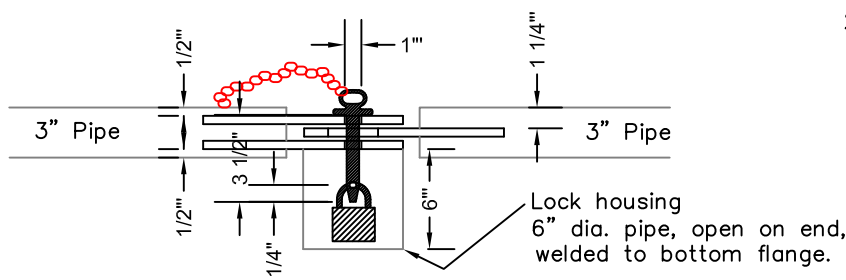


PIPE GATE DETAIL

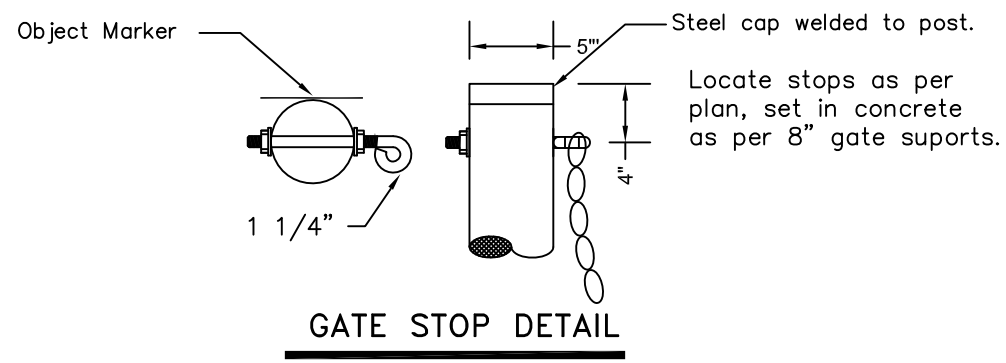
NOTE: INSTALL TWO GATE STOPS TO FASTEN THE GATE PARALLEL TO THE ACCESS ROAD. THE HEIGHT OF THE EYE BOLT SHALL MATCH THE TOP RAIL OF THE GATE. ATTACH 24" OF BRIGHT PLATED 3/8" CHAIN TO THE EYE BOLT. SUPPLY & INSTALL OBJECT MARKERS ON THE SIDE OF THE GATE STOP AWAY FROM THE GATE.



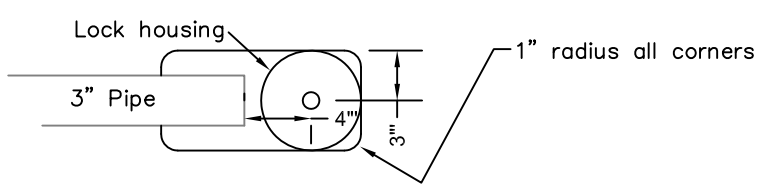
MIDDLE FLANGE



LOCKING DETAIL



GATE STOP DETAIL



TOP AND BOTTOM FLANGE

GENERAL NOTES

1. STEEL CAPS FOR GATE POSTS SHALL BE WELDED TO POST AND GROUND SMOOTH.
2. ALL BOLTS TO BE HARDNESS RATING OF GRADE A
3. ALL PIPE FOR GATE TO BE SCHEDULE 40
4. POSTS FOR GATE & STOPS TO BE STANDARD STEEL WELL CASING.
5. GATE AND ALL POSTS TO BE FINISHED w/ POLYUREATHANE PAINT.(SEE SECTION 09900–FINISHES)
6. ALL WELDS TO BE GROUND SMOOTH.
7. LENGTH OF GATE & STOP POSTS VARIES DEPENDING ON TERRAIN. ADJUST LENGTH AS NECESSARY FOR FINISH GRADE ELEVATIONS.

HINGE DETAILS

1. HINGE BOLT THREADS TO BE EXPOSED A MIN. OF 1 1/2" BEYOND NUTS ON EITHER SIDE OF THE GATE POST TO ALLOW ADJUSTMENT.
2. PROVIDE 3/4"x3" HINGE PINS FOR EACH HINGE.
3. GREASE THREADS OF HINGE BOLTS BEFORE INSTALLING.

LOCK DETAILS

1. USE A 3 1/2" x 7/8" HITCH PIN, BEVEL END AND DRILL LOCK HOLE TO ACCEPT 3/8" HASP.
2. IF THE CONTRACTOR WISHES TO USE THEIR OWN LOCK DURING CONSTRUCTION PROVIDE A KEY TO THE PROJECT MANAGER AND REGIONAL MAINTENANCE SUPERVISOR. INSTALL FWP #2661 MASTER LOCK AT FINAL ACCEPTANCE.
3. ATTACH 24" OF BRIGHT PLATED 3/8" CHAIN TO PIN AND OTHER END TO PIPE

M. McNearney	October, 2009	B. Mangum	April 2010		
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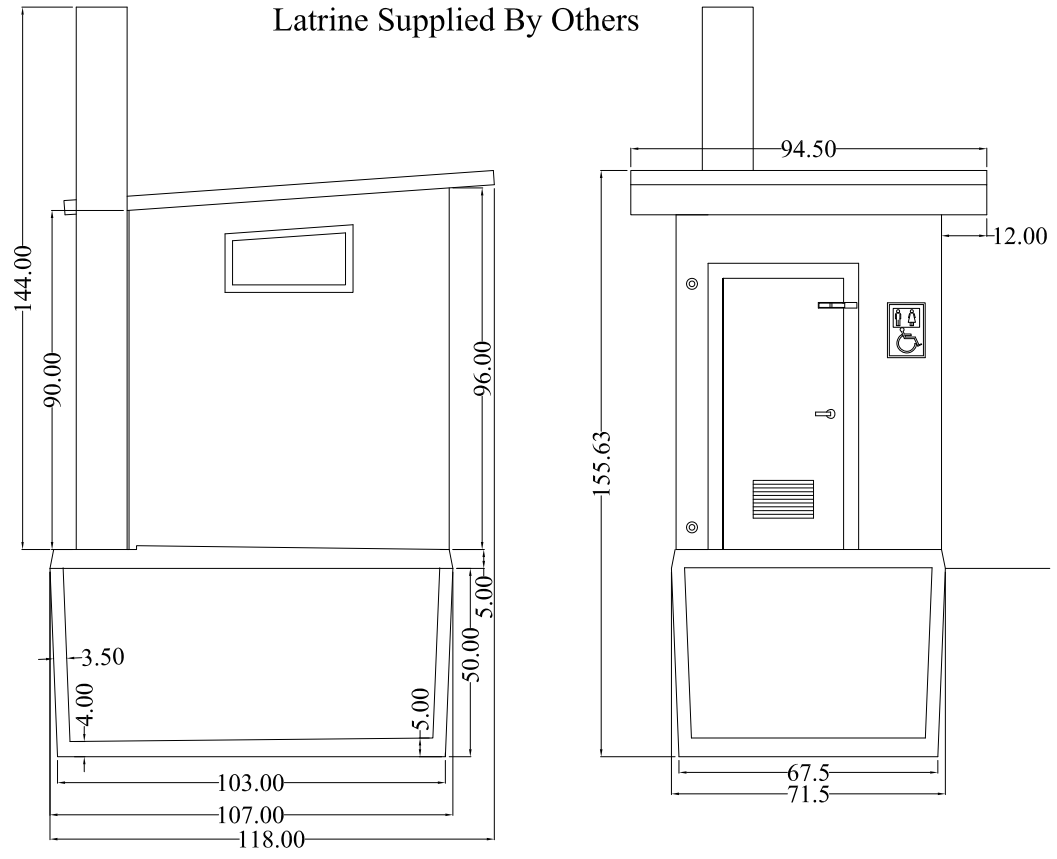
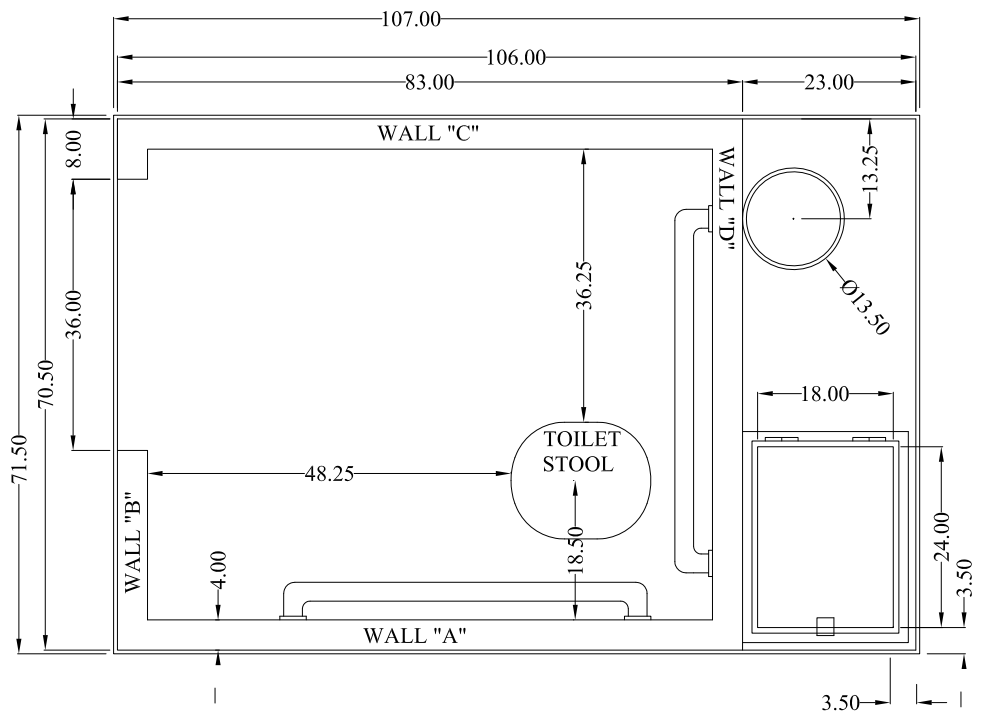
Montana Fish, Wildlife & Parks

Pipe Gate Details

Harper's Bridge FAS(near Missoula, MT)

For Information Only
Latrine Supplied By Others





GENERAL

All dimensions are in inches, unless otherwise noted.

INSTALLATION

General Installation involves excavation, leveling bottom of hole with drain aggregate, installing latrine, backfilling around latrine and landscaping.

EXCAVATION

A. Excavate subsoil to a point 12 inches deeper than required for latrine installation.

1. Depth of excavation is 50 inches for the precast latrines manufactured by Flathead Concrete.

2. Finish floor elevation shall be a minimum of 4-6 inches above natural grade measured at the front entrance.

B. Minimize over excavation. Stockpile excavated material for later backfilling and landscaping.

C. Compact bottom of hole with three passes of whacker or skid plate compaction device.

LEVELING

A. Use small gravel, 3/8 inch minus gravel, and place enough in bottom of hole such that when compacted, it will be 12 inches deep.

B. Compact leveling material with three passes of compaction device.

C. Level base for installation of latrine.

LATRINE INSTALLATION

A. The precast latrine will be set by the supplier.

B. Insure that latrine sits level and plumb when done installing.

BACKFILLING

A. Place a foot of 3/8 inch gravel around base of vault and compact.

B. Place in successive 8 inch layers material previously excavated from hole and compact.
1. Remove rocks larger than 6 inches in diameter from the fill.

2. Remove branches, roots and other or organic debris in fill.

LANDSCAPING

A. Slope grade away from latrine.

B. Blend fill slope into surrounding terrain.

C. Remove surplus fill material.

D. Remove soil to a depth of 2 inches beneath location for entrance slab and compact.

E. Place two inches of 3/4 inch pea gravel for bedding, level and compact.

M. McNearney October, 2009	B. Mangum April 2010	
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Latrine Details
Harper's Bridge FAS